

EXHIBIT 21



We Energies
231 W. Michigan St.
Milwaukee, WI 53203
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OVENS

"HISTORY OF THE MILWAUKEE SOLVAY COKE COMPANY"

1958
History (≈ 1960), also, Chain of title (last)

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Blocks #3 and 4 Semet Solvay ovens started operation in April 1904. As originally constructed, these ovens were 16½" wide x 6'6" high and 35'0" long, taking a charge of 7.82 tons of coal.

Blocks #1 and 2 Semet Solvay ovens started operation in April 1906 but were 5 flues high instead of 4 - dimensions 15-¾" wide x 8'1½" high x 36 ft. long, taking a charge of 9½ tons of coal.

During the period 1906 and 1907 Blocks 3 and 4 were also changed to the 5 flue type, same as Block 1 and 2. In 1909 and 1910, all ovens were relined with silica brick. All ovens relined after 1910 were so constructed to obtain a 17" average width and the longitudinal taper was increased from 1½" to 2".

Block #1 operated continuously until it was closed down on November 11, 1920 for dismantling and replacement by a 50 oven triangular Flue Koppers block which was put into operation August 24, 1921.

Block #2 was operated continuously from 1906 to July 31, 1921 when it was dismantled and replaced by present Koppers Block #2. The second Block of Koppers ovens was put into operation April 20, 1922. Both Koppers blocks have operated continuously since originally charged.

Semet Solvay Block #3 was shut down account of depression from September 2, 1921 to October 13, 1922 and has operated continuously since that time. Block #4 has operated steadily since 1906, approximately 52 years.

In 1952, 20 additional Solvay type ovens were added to the north end of our existing Semet-Solvay battery #4, making this, a 60 oven instead of a 40 oven battery.

The original collecting main on Solvay Battery #4 was replaced by a Pullman valve type main with accessory piping in 1953.

The Hot Tar drain installation installed in 1921 was dismantled and replaced by a rectangular tar & liquor decanter in 1953. This decanter was supplied with a motor operated flight conveyor for continuous tar removal.

In 1957, all flushing liquor piping on the two Koppers coke oven batteries was replaced.

COAL HANDLING

The first coal boat was unloaded November 1903 by means of steam operated Brown Hoist Dock Rigs #1 and 2. These rigs were originally of the incline boom counterweighted type.

In 1906, the coal bridge was put into service and dock rigs #1 and 3 were re-constructed with new machinery, horizontal booms and new buckets as the inclined booms did not allow the coal bridge to pass.

In 1930, #3 Dock Rig was remodeled, electrified and a larger bucket added which was counterweighted for smoother operation.

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No. 1 Dock Rig was also completely modernized and electrified in 1937 with counterweighted bucket. Both these rigs are in first class condition.

No. 2 Dock Rig was built in 1907 by Greer-Thompson Co. to operate as a steam rig. In 1910, this rig was electrified, all steam equipment being replaced.

In 1907, the breakers, pulverizers and mixing equipment were installed by Heyl Patterson in wooden structures. In 1910, the wood structures were replaced by permanent constructions of brick, concrete and steel buildings.

Very little is known of the coal preparation equipment prior to 1907 except that it consisted of a counterweighted car haul system feeding to present "M" conveyor with a crusher and elevator in the present Solvay Coal bin.

The coal conveyor system has been rebuilt from time to time as follows:

"A" Conveyor - 1926
"B" " - 1926
"C" & "D" Conveyor - Destroyed by fire and completely rebuilt in 1922.
"J"1 & "J"2 Coal conveyors built in 1907 were partially rebuilt when the Koppers blocks were installed in 1921.
Conveyors "R" & "S" to the Koppers bin were built in 1921.

The coal bridge was provided with automatic clamps in 1926.

In 1941, an 8 ton Wellman-Hullett type coal bucket with digging teeth was purchased for use on the Coal Stocking and Reclaiming Bridge.

In 1945, the 3 dock rigs were equipped with steel safety storm struts, special watchman's clock and rail bumpers.

A Caterpillar Diesel Operated Tractor was acquired in 1951 for compacting coal in the Storage Pipe.

A Fifth Coal bin was added to the existing 4 coal bins over the Pulverizers together with conveyors chutes, feeders, etc. for improved blending of By-product Coals. The bin will hold 165 tons of coal.

In 1955, the original tripper on our Coal Stocking & Reclaiming Bridge was dismantled and replaced by a modern motorized tripper.

The original sleeve bearing conveyor idlers were replaced by roller bearing idlers.

In 1956, the 3 Dock Coal Unloading Rigs were equipped with Centralized Lubrication Systems, replacing the original manual system.

A crawler type Tractor equipped with a bulldozer blade and rubber treads was purchased in 1957 to replace the original machine for cleaning up the holds of lake freighters after unloading the coal cargo.

BY PRODUCTS (GAS)

(1) By Product Building

The original by-product building (1904) housed 3 small engine driven exhausters and some ammonia and light oil scrubbing equipment, hence the name By-Product Building.

(2)

1906 building and equipment was destroyed by fire and rebuilt with 6 - 33 cu. ft. engine driven exhausters, Holmes Rotary Scrubbers and wash boxes. Fireproof construction was used on the new building. In 1907 a seventh engine exhauster unit was added, and in 1914, it was necessary to add a 14,000,000 cu. ft. 24 hr. engine driven booster (old #8) to pump surplus gas to the Third Ward plant.

In 1921, 2 Ingersoll-Rand 10,000,000 cu. ft. gas compressors #7 and 8 were installed to take care of the additional surplus gas released by the Koppers ovens.

In 1923, a 96 cu. ft. steam driven Connersville Exhauster #6 was installed to take care of Blk. #3 and 4, but this unit now handles the additional surplus gas released by the addition of a producer gas plant in 1929. In 1930, a duplicate 96 cu. ft. unit #5 was added as a spare for city gas pumping.

6 of the 7 - 33 cu. ft. exhauster units were dismantled and scrapped in 1929 and 1930 and were replaced by Vertical Engine driven 96 cu. ft. pumps obtained from the Milwaukee Gas Light Company. These are designated as #2, 3 and 4 Exhausters. The #1 Exhauster unit is the remaining 33 cu. ft. blower which should be replaced with the 96 cu. ft. unit, still at the Milwaukee Gas Light Company West Side Pumping Station. All steam, gas and water piping in the B.P. Building have been replaced since 1921.

In 1947, an additional Ingersoll-Rand 7,800,000 cu. ft. 24 hour capacity engine driven gas compressor was installed, replacing the last of the 7 - 33 cu. ft. exhauster units.

(2) North Condenser Gas Bldg.

This was originally a corrugated iron building with 8 tubular coolers 9'0" dia. x 27'0" high. In 1910, the lean to, a brick and steel structure was added to the east side and in 1915 the original corrugated iron structure was dismantled and replaced with a permanent brick and steel structure. In 1916, the tubular coolers were changed to the wood hurdle type with accessory circulating pumps and the gas piping on the 4 coolers before the exhausters was increased from 20" to 24". The decanters and storage tanks are of the original construction except that the former have been rebuilt in the past 10 years.

In 1950, a 15,000 MCF Connersville Gas meter was installed to measure surplus coke oven gas delivered to Milwaukee Gas Light Company.

In 1953, a complete modern condensing equipment was installed for the Semet-Solvay Batteries in order to handle the additional gas production. Two hurdle type 10'6" dia. x 56 ft. high coolers were added with accessory circulating pumps, piping, etc.. A rectangular tar & liquor decanter, 10 ft. x 10 ft. x 37 ft. size, with motor driven flight conveyor for tar removal. Also installed were 2 liquor pumps directly connected to the decanter.

(3) South Condenser Gas Bldg.

Originally built in 1906, a corrugated iron building, housing 8 - 9 ft. dia. x 20 ft. high tubular coolers. In 1909, 8 additional coolers were added at the south end of the building, but of the wood hurdle type. In 1915, the corrugated iron siding was replaced by brick. In 1917, the 8 original tubular coolers were changed to the wood hurdle type and gas piping increased 20" to 24". Circulating pumps were also added at that time with additional atmospheric cooling coils. In 1927, an explosion demolished the roof and all sash at which time a Robertson APM roof was erected and new sash installed.

In 1940, a 20,000 gallon bunker oil unloading and storage system was installed to permit the addition of bunker oil to pulverized coal for additional gas production.

In 1945, #6 spare exhaustor and booster unit in the Exhaustor Bldg was equipped with an Askania Suction Control Regulator.

A spare turbo driven pump for emergency circulation of liquor was added in 1953. This unit has a capacity of 2,000 gallons per minute.

(4) Fuel Gas Holder

1 - 40,000 cu. ft. single lift 56" dia. holder was installed in 1910. In 1937 a new cover was welded over the top of the original one.

The sides of this holder were replaced in 1952.

BY PRODUCT(TAR)

One 55'0" dia. x 31' high 500,000 gal. tar storage tank was installed in 1909. On August 20, 1938, this tank was struck by lightning making it necessary to replace the roof and top course of sheets. All tar pumps and smaller tanks were erected about 1906. The original tar storage tank 32' dia. x 20' high, 120,000 gal. capacity, is now used as a settling tank for the ammonia recovery plant. This tank was built about 1906. A Dorr Clarifier Agitator was added to this tank in 1926, in connection with the sanitary sewer system.

The tar equipment for the Koppers blocks was erected in 1921.

In 1929, A Cottrell electrical tar precipitator was put into operation. The original P. & A. extractors were abandoned about 1908 and these were not replaced.

The 7' dia. x 23' long Tar Collector tank at the Tar Storage tank was replaced in 1956.

BY PRODUCT (AMMONIA)

The Ammonia Concentration Building was built in 1904 of wood and brick construction similar to our front garage. In 1916, this was torn down and a structural steel, brick wall and fireproof roof was erected. At the same time a 5 ton crane was added. The building was reroofed in 1925.


The line storage lean-to was built in 1911.

The weak liquor storage tanks 22' dia. x 16' high, 42,000 gal., were built in 1904. In 1907 a fifth weak liquor tank 32' x 20', 120,000 gal. was added.

Three concentrated ammonia storage tanks 26'6" dia. x 20' high, 55,000 gal. each, were added in 1916, replacing 4 - 16,000 gal. horizontal tanks.

Three separate sets of ammonia concentrating equipment are located in the ammonia building. These were originally of cast iron, erected in 1904, 1906 and 1913, respectively. In 1925 and 1926, the 3 washers and the 3 partial coolers were changed from cast iron to aluminum.

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 In 1929 and 1930, the preheaters were raised 6 rings in height to permit a liquor concentration of 30%. The fixed and free stills have been rebuilt from time to time and only the tanks and pumps remain of the original construction.

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In 1943, an 8" underground tile duct was installed between the Ammonia Concentration building and the 200 foot high stack of Koppers battery #2.

In 1955, one of our original (Ammonia Weak Liquor Tanks) 22 ft. dia. x 16 ft. high was dismantled and replaced with a similiar tank of 50% additional capacity.

BY PRODUCT (LIGHT OIL)

The original light oil plant was installed in what is now the Power House annex and Mechanical Wash Room. Only light oil was recovered and this plant operated until 1910 when it was shut down and the new one in the present benzol scrubbing (LBA) building and the L.O. Building was started.

There were 6 benzol hurdle type scrubbers in this building - 5 - 9'0" dia. x 27' high and one 8'0" dia. x 27'0" high. The light oil was sold to the Solvay Company and no distillation was attempted.

In 1916 the scrubbing capacity was increased by 3 additional washers, one 10' dia. x 38'6" high, the other two 12'0" dia. x 63'0" high. In 1926, two of the 9'0" x 27'0" washers were replaced by two Koppers scrubbers, hurdle type, 9'0" dia. x 90'0" high and the hurdles were removed from the three south Solvay scrubbers inside the building and converted to pure residue storage tanks for the benzol recovery, giving additional storage capacity as follows: 2 - 11,000 gal. capacity and one 7,000 gal. In 1923 the L.O. Plant was destroyed by fire and new wash oil still 8'0" dia. with accessory tanks, coolers, etc., replaced the Semet Solvay process, the plant being completely rebuilt.

The original 1910 L.O. Storage tanks were located in a concrete pit on the site now occupied by the tank house. This pit later became the foundation for the brick and steel tank house which was destroyed in 1923.

BY PRODUCT (BENZOL)

In 1915 Benzol recovery was started on a small scale using the Barrett process using 2 vertical 8'0" dia. x 8'0" high stills with a 36" bell column. At that time 2 tiers of tanks were added in the tank house for storing intermediate and pure fractions and a brick structure was erected over the tanks.

In 1917, 2 - 8,750 gal. stills with 5'0" dia. columns were added with accessory coolers, etc.

In 1920 the 2 small 36" columns were replaced by a 5'0" dia. column.

In 1923 the entire benzol plant was demolished and in April 1924, the present plant was put into operation, designed for 50% additional capacity over the former plant. This plant was equipped with ventilating systems which make a complete air change every six minutes.

A complete Ansul Fireprotection System was added in the Benzol Rectifying and Oil Storage buildings installed in 1951.

In 1953, the Connersville absorbent oil pump together with the debenzolized oil pumps were replaced by turbo driven centrifugal pumps.

The 14,500 Gallon Sulphuric Acid Storage tank was dismantled and replaced in 1957.

BY-PRODUCTS (MISCELLANEOUS)

A portable Connersville gas purging machine was bought in 1951

A complete natural gas piping system was installed to supply mainly off peak gas to our main boiler house. In 1952, this gas was utilized for the production of steam.

1,000 ft. of 24" and 20" gas line installed for handling additional surplus gas released by the Butane Producer Gas Underfiring System in 1947.

COKE HANDLING

The original quenching cars were small units with electric locomotives, the gates being operated by hand. In 1909, 9 larger Atlas quenching cars were put into operation, these also having manually operated unloading gates. No locomotive was used, the motors and controllers being carried by the quenching cars.

These were replaced with 3 electric locomotives and quenching cars with air operated gates in 1931, one used as a spare, i.e., 2 cars did the work of 5.

The coke handling was housed in a long coke shed about 400' long located west of blocks 3 and 4. This shed housed a revolving screen for sizing furnace coke, the screen being replaced in 1923 by a Robbins 8 roll grizzly. No coke wharf was provided, the coke being discharged directly into a chute leading to a 2 roll crusher, thence to the screen after which a loading chute discharged the coke into Railroad cars.

The foundry coke was sized over a stationary bar grizzly, replaced in 1927 by a Robbins grizzly, thence onto a shuttle conveyor which loaded either open top flat bottom gondolas or box cars, the latter being pended on a tilting box car loader.

The undersize was crushed and delivered to the domestic building on the present incline conveyor. The screening system consisted of 2 large and 2 small revolving screens, the former separating egg, range and nut, the latter the pea and breeze. There was no boom loader, the open top equipment being loaded with a chute, the box cars being loaded with present 16" car loader. The rescreen consisted of small stationary screen plates discharging the fines onto the present 16" breeze conveyor and the present belt elevator. This equipment was put in about 1906 except as noted.

In 1926 the Domestic Screening and Loading was rebuilt, all rescreening being done over vibrating screens. 1,000# weigh hoppers for loading trucks were installed, a boom loader was installed for loading open top R.R. equipment, the Manierre box car loader, breeze conveyor and breeze elevator being the only rescreening equipment retained. In the screening room, 2 rotary grizzly screens, 2 shaker screens and 4 vibrating screens replaced the old revolving screens, all of the original equipment being discarded, after the crushers.

In 1928 loading of furnace coke was abandoned and this equipment was torn out in 1931.

In 1930 the present foundry coke handling installation was installed consisting of a 2 car wharf, a wharf conveyor, incline conveyor, 12 roll grizzly screen, 36" picking table, boom loader, Ottumwa box car loader with 2 steel and corrugated iron structures housing the screen and box car loader respectively.

In 1931 the present crushing system was installed with accessory conveyors, and one car domestic coke wharf which in 1938 was increased to accommodate 2 cars easily, 3 in an emergency.



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In 1941, an additional foundry screening building housing, screens, elevators, conveyors, chutes, etc., was installed south of the foundry screening station erected in 1930. The combination of the two installations permitted sizing and loading 2 - 3 sizes of foundry coke.

In 1950, additional coke screening equipment was installed to size Furnace Coke.

A buckwheat coke screening installation was added in the Domestic Coke building in 1950.

A Foundry Coke Car loading station for medium size coke was added in 1952, complete with beam loader and accessory conveyors and structures.

In 1952, one of the 3 quenching cars purchased in 1931 was dismantled and replaced with a modern car of later design. In 1956, the second of the 3 quenching cars obtained in 1931 was retired and replaced by a car similar to the one acquired in 1952.

The original 2 - 10 ton wagon scales were replaced by two 30 ton truck scales, each with a 40 ft. long platform in 1953.

In 1954 a coke inspectors station was installed with accessory conveyor, spiral chute and structural work to improve the handling and inspection of our intermediate size foundry coke.

The 12,000 gallons Koppers Quenching Tank was replaced by a similar tank in 1953.

A Michigan #125 Front end loader was purchased for stocking & reclaiming foundry coke, also for general yard use in 1956.

The Solvay Batteries Coke quenching station was rebuilt in 1956.

The Hummer vibrating rescreen for Chestnut Coke was discarded and replaced by a larger Robins Gyrex Screen in 1956.

In 1957, both Robins eliptex screens in the Domestic Coke Screening building were equipped with electrically heated screens and accessories for increasing buckwheat coke production.

A portable Barber Green Coke Stacker equipped with a conveyor 60 ft. long was acquired in 1957 for stocking Foundry Coke in our storage yard.

STEAM PRODUCTION

The original steam supply was obtained from the 4 - 400 H.P. waste heat boilers of Solvay Blocks 3 and 4, the 4 - 400 H.P. waste heat boilers of Solvay Blocks 1 and 2, also 3 - 400 H.P. return tubular auxiliary boilers located in the space now occupied by the present boiler house.

All of these units have been dismantled with the exception of the 4-Block 3 and 4 Solvay waste heat boilers. The present boiler house was constructed in 2 steps, the North portion, 3 bays, being erected in 1918, the South 4 bays being completed in 1921. The boiler house comprises 2 - 400 H.P. Badenhansen, 2 - 400 H.P. Kidwell and 4 - 600 H.P. Kidwell boilers, a total of 4,000 Boiler Horse Power. All boilers are of the Ring Circuit Water Tube type.

Six Waste Heat boilers installed by the Koppers Company in 1929 after the Producer Gas Sets complete the steam generating units.

In 1948, a Robins Car Shaker was added to the Boiler House Fuel Unloading system.

In 1950, an Internal Phosphate treatment was installed in our Main Boiler House as an addition to our regular water softening plant.

No. 8, 400 H.P. Badenhausem Boiler was remodeled in 1953 to permit the use of coal as well as coke breeze for underfiring. The ignition arch and baffling were altered and sprays were installed in the fuel bin for use when burning coal.

In 1955, No. 3, 600 H.P. Kidwell boiler was converted from Coke breeze to Coal underfiring. No. 6, 400 H.P. Kidwell boiler was also similarly converted in the same year.

In 1957, the original draft controls on 4 - 600 H.P. Kidwell boilers were replaced by an installation of improved design.

ELECTRIC LIGHT AND POWER

The Main Power House structure was built in 1903 of wood and brick similar to our front garage. In 1951 that portion of the building above the ground was replaced with steel columns and trusses, brick walls, steel sash and fireproof roof. The original foundation which was of concrete was not changed. In 1926, the asbestos roof was replaced.

The Power House Annex was built in 1903 of concrete brick, and structural steel construction and was originally used for recovery of Light Oil. No. 6 - 600 K.W. Turbo Generator, a De Laval Crocker Wheeler Unit, was installed in this building in 1914, a 1000 K.W. Allis Chalmers Motor Generator Unit #7 was installed in 1928 and two motor driven air compressors were installed in 1938, replacing 2 steam driven air compressors dating back to 1904.

The Generating Units in the Main Power House were installed as follows: Three 200 K.W. Ball & Wood General Electric Engine driven units, #1, 2 and 3, were erected in 1904. In 1906, a 300 K.W. Engine Generator Unit #4 was added. In 1909, #5 Rateau-Smoot 600 K.W. Turbo Generator unit was installed.

In 1945, the main switchboard was remodeled in the Power House and extended west as recommended by the United Light and Power Service Department and the Wisconsin Electric Power Co.

In 1945, a De Laval Centrifugal oil purifier was installed in the Power House for centrifuging lubricating oil.

WATER SUPPLY

The original plant water supply consisted of an artesian well system which was found inadequate and abandoned after a short period of operation. A pump house was erected at the dock at the S.E. corner of the property and began operation with 3 centrifugal pumps, 1200 gal. min., each belt connected to 50 H.P. motors. A fourth centrifugal pump was added in 1912, this one direct connected to the motor and of 1400 G.P.M. capacity. In 1909, a 1500 G.P.M. pump was installed to furnish condenser water for #5 Turbo Generator Condenser in the Power House.

This system could not supply the plant requirements so in 1917, 2 - 10,000 G.P.M. turbo driven steam units with 2 - 5,000 G.P.M. condenser water pumps were located in the Water Purification Bldg. basement and the dock pump house was abandoned. The structure itself was similar to the front garage.



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The apparatus for the treatment of boiler feed water is practically the same as when originally constructed in 1906, except that Sodium Aluminate and Nalco have been added to the chemicals and the lime and soda amounts reduced.

A concrete tunnel 7'6" wide and 6' high containing 2 - 24" suction lines from the dock intake to the mill pumps, was constructed in 1916. In 1926 Chain Belt Co. electrically operated screens were installed at the intake, replacing stationary screens. A structural steel building with asbestos transite siding and roofing was erected to house the screens.

The two present turbine driven boiler feed pumps are located in this building with 2 feed water heaters, these being installed in 1916, replacing the 3 original reciprocating pumps installed in 1904 and 1906.

In 1951, one of the 2 - 10,000 G.P.M. turbo driven steam mill water pumps was replaced with a centrifugal pump of similar design. In 1953 the other pump was similarly replaced.

OFFICE & UTILITY BUILDINGS

The present front garage was the original main office and was built in 1903.

The Engineering and Laboratory office was put into use in 1911. In 1913 the Sales and Accounting office was finished.

The remainder of the utility buildings were completed as follows:

1. Dock Foreman's office.
Built in two steps. Front portion built in 1908 - 18' x 24' x 10'8" high.
In 1911 - 21 additional feet were added for locker and wash room facilities.
2. Quenching car round house 1921
3. Coke Handling Wash Room 1910
4. Gas Testing Station 1911
5. Fire Pump House 1908
6. Machine Shop 1907
7. Blacksmith Shop 1908
8. Carpenter & Pipe Shop 1909
9. Oil and Paint House 1908
10. Repair Garage 24' x 42' in 1916
Addition 24' x 37' in 1919
11. Employees garage - West Yard 1916
- East Yard 1920
12. Switchman's Office 1917
13. Watchman's House 1917
14. Shift Foreman's Office 1909
15. Hose House #1 1909
" " #2 1929
16. Yard Fence 1917

In 1945, a J-233-B Shop Mule Tractor equipped with a cable winch was added to the Mechanical Department equipment.

In 1941, a Washroom was constructed on the ground floor of the Solvay Batteries Coal Bin Building and fully equipped with shower room, toilet, steel lockers and Bradley wash fountain.

In 1941, air conditioners and fluorescent lighting were installed on the second floor of the Main Office in the Accounting and Clerical offices. Fluorescent lighting was also installed in the laboratory of the Engineering and Laboratory Bldg. In 1945, all offices on the first floor of the Main office were provided with fluorescent lighting.

In 1942, the South end of the plant at the P.M. Carferry slip was enclosed with a galvanized woven link iron wire fence 8'0" high and 315 ft. long. A wood retaining wall was included affording additional protection against wash-outs.

In 1942, the Reflectolux lights were installed along the property boundary and plant fence for protection against sabotage.

In 1948, a Storage building for Oven brick shapes and spare parts was installed west of the Benzol Scrubber building.

In 1952, a storage building of structural steel framing, with corrugated iron roof & siding, 54 ft. wide x 96 ft. long x 16 ft. high was erected on our East Yard property for housing large repair parts.

The Lime Storage building was dismantled and a Riggers Tool building erected in its place in 1954.

In 1956, a pressure test oven for testing properties of by-product coals was installed in our Coke Sampling Laboratory.

TRANSPORTATION EQUIPMENT

(1) Locomotive Cranes

Original locomotive crane, 10 ton, used. Acquired from Industrial Brownhoist in 1903. This was sold to the Newport Company in 1917. Present #1 crane, 15 ton Link Belt Company, purchased in 1917. #2 crane purchased from the Dodge Coal Storage Company now the Link Belt Company, in 1908. #3, 15 ton crane, purchased from Link Belt Company in 1920. #4, 15 ton Industrial Brownhoist crane, purchased second hand from Milwaukee Dry Dock Company. Crane built about 1917, acquired by us in 1929.

In 1952, a 20 ton Diesel Powered Locomotive Crane mounted on R.R. type Trucks was purchased for stacking & reclaiming coal and general yard work.

(2) Locomotives

The original locomotives, 2 - 12" x 16" Class F3 Manhattan, were purchased by Semet Solvay in 1903. In 1910 one of these was sold to a construction company and in 1912 the other was sold to the Northwestern Iron Company of Mayville, Wisconsin. In 1910 and 18" x 24" Baldwin 6 wheel steam switching locomotive was acquired. This was used until 1938 when it was replaced by a Diesel unit. In 1917 a duplicate Baldwin steam engine #3, duplicate of the one purchased in 1910, was acquired and this is at present used as a spare for the two Diesel units. For switching in the Coke Handling, a Baldwin 4 wheel saddle tank locomotive was purchased in 1912, replacing the Manhattan sent to Mayville. This was scrapped in 1938.

On December 31, 1936, our first Ingersoll-Rand G.E. 60 ton Diesel Electric switching locomotive was delivered, our #104, and on October 26, 1937, the second Diesel Electric Unit, our #105, a duplicate of #104, was delivered. These two units plus spare steam locomotive #3, comprise our present switching locomotives.

One 65 ton Diesel Electric Switching locomotive was acquired, replacing the steam engine #3.



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(S) Railroad Cars

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In 1904, 6 steel hopper bottom 50 ton Gondola Railroad cars were purchased by the Semet-Solvay Company. These are still in use. In 1929 - 6 second hand cars of the same description were added to transfer producer fuel from the Domestic Screening Plant to the Producers.

In addition, two wood flat bottom and a wood flat car are available for rubbish disposal, construction or maintenance work and spillage recovery. Acquired about 1917. All of these cars are in use.

In 1942, 6 all steel, 50 ton, used hopper bottom gondola R.R. cars were purchased. These were equipped by us with wood racks, increasing the capacity of the cars to maximum that our plant clearances would permit.

In 1947, 10 - 8,000 gallon capacity R.R. tank cars were added for use in interstate commerce.

In 1951, 2 Railroad Flat Cars were purchased for general maintenance purposes.

Two 8,000 gallon capacity R.R. tank cars were acquired in 1956, making a total of 12 tank cars suitable for interstate commerce.

PRODUCER GAS PLANT

In 1943, a Cottrell electrical precipitator was added to clean producer gas used in underfiring the Solvay Batteries.

In 1944, a Mechanical Ventilating System was installed over the Gas Producer charging floor to remove producer gas while charging the feed hoppers.

PETROLEUM UNDERFIRING

In 1942, a bulk natural gasoline unloading and storage system was installed consisting of 6 - 11'0" dia. vertical storage tanks in an approved spillage pit. The tanks provide a working storage of 90,000 gallons. A concrete foundation supported on wooden piling supports the tanks. A Model #15 Foamite Underwriter's approved fire protection system is provided.

In 1942, a Natural Gasoline Producer Gas Underfiring plant was installed in the North Scrubber building to provide an 800 B.t.u. gas mixture for underfiring the Solvay Batteries #3 and 4, the principal items consisting of an MYMD-28 Hills-McCanne Dual Metering Pump, a 36" dia. x 72 ft. high fractionating column, a Cutler-Hammer recording calorimeter, bottoms oil pump, cooler and storage tank, 2-5 ft. dia. tubular heaters, 2 oven propeller fans, electrical signal system charging pump and tank and gas mixer.

In 1943, a Butane-Natural Gasoline blending system was installed to maintain the required vapor pressure on the Butane-Natural Gasoline mixture fed to the fractionating column.

In 1943, a Cottrell Hot Cathode Rectifier was installed at the Koppers Batteries Ram Changing Station to clean the producer gas used for underfiring Solvay Batteries #3 and 4.

In 1946, the bulk natural gasoline unloading and storage system was dismantled and replaced with four 25,000 gallon Propane-Butane Tanks.

In 1950, the Natural Gasoline Producer Gas underfiring plant was dismantled and replaced by a Vaporizer installation.